

What is claimed is:

1. A semiconductor chip comprising:

a first device formative layer with a thickness of at most
50 μ m provided over a thermal conductive substrate via a first
5 adhesive layer;

a thermal conductive film formed on the first device formative
layer; and

a second device formative layer with a thickness of at most
50 μ m formed over the thermal conductive film via a second adhesive
10 layer.

2. The semiconductor chip according to Claim 1, wherein the
first device formative layer and the second device formative layer
have thicknesses of from 0.1 to 10 μ m.

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3. The semiconductor chip according to Claim 1, wherein the
thermal conductive substrate is formed of one of a ceramic material
containing aluminum oxide, aluminum nitride, aluminum nitride oxide,
or silicon nitride as its main components, and a graphite material
20 containing carbon as its main components.

4. The semiconductor chip according to Claim 1, wherein the
thermal conductive film comprises at least one selected from the
group consisting of aluminum nitride, aluminum nitride oxide, boron
25 phosphide, boron nitride, and diamond like carbon.

5. The semiconductor chip according to Claim 1, wherein at least one of the first device formative layer and the second device formative layer comprises at least one selected from the group
5 consisting of a TFT, a CPU including TFTs, an MPU, a memory and a light-emitting apparatus.

6. An electric device having the semiconductor chip according to claim 1.

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7. The electric device according to claim 6, wherein the electric device is one selected from the group consisting of a video camera, a digital camera, a head mounting display, a car navigation, a projector, a personal computer and a potable information terminal.

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8. A semiconductor chip comprising:

a first device formative layer with a thickness of at most 50 μ m provided over a thermal conductive substrate via a first adhesive layer;

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a thermal conductive film formed on the first device formative layer; and

a second device formative layer with a thickness of at most 50 μ m formed over the thermal conductive film via a second adhesive layer,

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wherein each of the first device formative layer and the

second device formative layer is electrically connected to the thermal conductive substrate by a connection wire.

9. The semiconductor chip according to Claim 8, wherein the
5 first device formative layer and the second device formative layer have thicknesses of from 0.1 to 10 μ m.

10. The semiconductor chip according to Claim 8, wherein the thermal conductive substrate is formed of one of a ceramic material
10 containing aluminum oxide, aluminum nitride, aluminum nitride oxide, or silicon nitride as its main components, and a graphite material containing carbon as its main components.

11. The semiconductor chip according to Claim 8, wherein the
15 thermal conductive film comprises at least one selected from the group consisting of aluminum nitride, aluminum nitride oxide, boron phosphide, boron nitride, and diamond like carbon.

12. The semiconductor chip according to Claim 8, wherein at
20 least one of the first device formative layer and the second device formative layer comprises at least one selected from the group consisting of a TFT, a CPU including TFTs, an MPU, a memory and a light-emitting apparatus.

25 13. An electric device having the semiconductor chip

according to claim 8.

14. The electric device according to claim 13, wherein the electric device is one selected from the group consisting of a video
5 camera, a digital camera, a head mounting display, a car navigation, a projector, a personal computer and a potable information terminal.

15. A semiconductor chip comprising:

a first device formative layer with a thickness of at most
10 50 μ m provided over a thermal conductive substrate via a first adhesive layer;

a thermal conductive film formed on the first device formative layer; and

a second device formative layer with a thickness of at most
15 50 μ m formed over the thermal conductive film via a second adhesive layer,

wherein a first semiconductor device included in the first device formative layer and a second semiconductor device included in the second device formative layer are electrically connected
20 via the second adhesive layer by a first wiring included in the first device formative layer and an auxiliary wiring connected electrically to a second wiring included in the second formative layer.

25 16. The semiconductor chip according to Claim 15, wherein the

first device formative layer and the second device formative layer have thicknesses of from 0.1 to 10 μ m.

17. The semiconductor chip according to Claim 15, wherein the
5 second adhesive layer contains an anisotropic conductive material.

18. The semiconductor chip according to Claim 15, wherein the thermal conductive substrate is formed of one of a ceramic material containing aluminum oxide, aluminum nitride, aluminum nitride oxide,
10 or silicon nitride as its main components, and a graphite material containing carbon as its main components.

19. The semiconductor chip according to Claim 15, wherein the thermal conductive film comprises at least one selected from the
15 group consisting of aluminum nitride, aluminum nitride oxide, boron phosphide, boron nitride, and diamond like carbon.

20. The semiconductor chip according to Claim 15, wherein at least one of the first device formative layer and the second device
20 formative layer comprises at least one selected from the group consisting of a TFT, a CPU including TFTs, an MPU, a memory and a light-emitting apparatus.

21. An electric device having the semiconductor chip
25 according to claim 15.

22. The electric device according to claim 21, wherein the electric device is one selected from the group consisting of a video camera, a digital camera, a head mounting display, a car navigation,
5 a projector, a personal computer and a potable information terminal.

23. A method for manufacturing a semiconductor chip having a plurality of device formative layers with thicknesses of at most 50 μ m over a thermal conductive substrate, comprising the steps of:
10 fabricating a first device formative layer including a plurality of thin film transistors over a first substrate;

fabricating a soluble organic resin film over the first device formative layer;

fabricating a first adhesive layer in contact with the first
15 soluble organic resin film;

bonding the second substrate to the first soluble organic resin film via the first adhesive layer, and sandwiching the first device formative layer and the first soluble organic resin film between the first substrate and the second substrate;

20 separating and removing the first substrate from the first device formative layer by a physical means;

fabricating a second adhesive layer in contact with the thermal conductive substrate;

bonding an exposed surface of the first device formative layer
25 to the thermal conductive substrate via the second adhesive layer;

separating the first adhesive layer and the second substrate
from the first device formative layer;

removing the first soluble organic resin film with solvent;

fabricating a thin film having thermal conductivity over an
5 exposed surface;

fabricating a second device formative layer including a
plurality of thin film transistors over a third substrate;

fabricating a second soluble organic resin film over the
second device formative layer;

10 fabricating a third adhesive layer in contact with the second
soluble organic resin film;

bonding the fourth substrate to the second soluble organic
resin film via the third adhesive layer, and sandwiching the second
device formative layer and the second soluble organic resin film
15 between the third substrate and the fourth substrate;

separating and removing the third substrate from the second
device formative layer by a physical means;

fabricating a fourth adhesive layer in contact with a thin
film having thermal conductivity; and

20 an exposed surface of the second device formative layer over
the thin film having thermal conductivity via the fourth adhesive
layer.

24. The method for manufacturing the semiconductor chip
25 according to Claim 23, wherein the third adhesive layer and the

fourth substrate are separated from the second device formative layer, and the second soluble organic resin film is removed with solvent.

5 25. The method for manufacturing the semiconductor chip according to Claim 23, wherein the thin film having thermal conductivity is formed of a film of aluminum nitride, aluminum nitride oxide, boron phosphide, boron nitride, or diamond like carbon, or a lamination film of these films, each of which is formed
10 by sputtering.

 26. The method for manufacturing the semiconductor chip according to Claim 23, either or both of the second adhesive layer and the fourth adhesive layer are formed by using an anisotropic
15 adhesive, and the device formative layer is bonded via either or both of the second adhesive layer and the fourth adhesive layer by being irradiated with ultra waves.